

ATTORNEY DOCKET NO. 14028.0295P1

SEQUENCE LISTING

<110> The Government of the United States of America, as represented by the
Secretary, Department of Health and Human Services

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WOO, Jung-Hee
LIU, Yuan-Yi

<120> METHODS FOR EXPRESSION AND PURIFICATION
OF IMMUNOTOXINS

<130> 14028.0295P1

<140> Unassigned
<141> 2004-08-02

<150> 60/491,923
<151> 2003-08-01

<160> 35

<170> FastSEQ for Windows Version 4.0

<210> 1
<211> 22
<212> PRT
<213> H. sapiens

<400> 1
Asp Val Thr Leu His Ala Asp Ala Ile His Arg Gly Gly Gly Gln Ile
1 5 10 15
Ile Pro Thr Ala Arg Arg
20

<210> 2
<211> 22
<212> PRT
<213> M. musculus

<400> 2
Asp Val Thr Leu His Ala Asp Ala Ile His Arg Gly Gly Gly Gln Ile
1 5 10 15
Ile Pro Thr Ala Arg Arg
20

<210> 3
<211> 22
<212> PRT
<213> R. norvegicus

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<400> 3
Asp Val Thr Leu His Ala Asp Ala Ile His Arg Gly Gly Gly Gln Ile
1 5 10 15
Ile Pro Thr Ala Arg Arg
20

<210> 4
<211> 22
<212> PRT

<213> C. griseus

<400> 4
Asp Val Thr Leu His Ala Asp Ala Ile His Arg Gly Gly Gly Gln Ile
1 5 10 15
Ile Pro Thr Ala Arg Arg
20

<210> 5
<211> 22
<212> PRT
<213> D. melanogaster

<400> 5
Asp Val Thr Leu His Ala Asp Ala Ile His Arg Gly Gly Gly Gln Ile
1 5 10 15
Ile Pro Thr Thr Arg Arg
20

<210> 6
<211> 22
<212> PRT
<213> C. elegans

<400> 6
Asp Val Thr Leu His Ala Asp Ala Ile His Arg Gly Gly Gly Gln Ile
1 5 10 15
Ile Pro Thr Ala Arg Arg
20

<210> 7
<211> 22
<212> PRT
<213> S. pombe

<400> 7
Asp Val Val Leu His Ala Asp Ala Ile His Arg Gly Gly Gly Gln Ile
1 5 10 15
Ile Pro Thr Ala Arg Arg
20

<210> 8
<211> 22

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<212> PRT
<213> *P. pastoris*

<400> 8
Asp Val Thr Leu His Ala Asp Ala Ile His Arg Gly Gly Gly Gln Val
1 5 10 15
Ile Pro Thr Met Lys Arg
20

<210> 9
<211> 22
<212> PRT
<213> *S. cerevisiae*

<400> 9
Asp Val Thr Leu His Ala Asp Ala Ile His Arg Gly Gly Gly Gln Ile
1 5 10 15
Ile Pro Thr Met Arg Arg
20

<210> 10
<211> 66
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence; note =
synthetic construct

<400> 10
gatgttaccc tgcacgcccga tgctatccac cgccgcggag gacaagtcat tccaaaccatg 60
aagaga 66

<210> 11
<211> 223
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence; note =
synthetic construct

<400> 11
actttaaagt tcttaatttt gttcctcgta gaaaagaacgc atagataatt caaaatggca 60
aaatgggtat gtgtttttt atagttcatg tgccgaacaa ctaccgttt aacttcactg 120
tcgatcagat gcgatccctt atggacaagg tgtccaaacgt ccgtaacatg tcggatttg 180
cccacgttga tcacggtaag tccactttaa ctgactccct ggt 223

<210> 12
<211> 250
<212> DNA
<213> Artificial Sequence

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<220>

<223> Description of Artificial Sequence; note = synthetic construct

<400> 12

actttgaagt	tcttaatttt	gttcctcgta	gaaagaacgc	atagataatt	caaaatgggt	60
atgttttt	ttatagtta	tgtgccgaac	aactaccgtt	tcaagatggg	agccagccac	120
taacatctcc	tctagttaac	ttcactgtcg	atcagatgcg	atccctttag	gacaagggtga	180
ccaaacgtccg	taacatgtcg	gttattgccc	acgttgcata	cggtaagtcc	actttaactg	240
actccctgg						250

<210> 13

<211> 2601

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence; note = synthetic construct

<400> 13

atggtaact	tcactgtcga	tcagatgcga	tcccttatgg	acaagggtgac	caacgtccgt	60
aacatgtcgg	ttattgccc	cgttgatcac	ggtaagtcca	ctttaactga	ctccctggtg	120
caacgtccg	gtattatttc	tgctgccaag	gctggtgagg	cccgtttcac	tgatactaga	180
aaggacgagc	aagagagagg	tatcaccato	aagtctaccg	ccattttctt	gtactctgag	240
atgggtgacg	acgatgtcaa	ggagatcaag	cagaagactg	aaggtaacag	tttccttatac	300
aacttaattg	actccccagg	tcacggttgc	ttctcttctg	aggtcaactgc	tgctctgcgt	360
gttactgacg	gtgttttgg	cgtcggttgc	tgtgttgaag	gtgtctgtgt	tcaaaactgag	420
accgtttgc	gtcaagctt	gggtgaaaaga	atcaagccag	ttgttgcata	taacaaggtc	480
gaccgtgctc	ttttggagtt	gcaagttacc	aaggaggacc	tgtaccagtc	tttcgctaga	540
accgtcgagt	ccgtaaacgt	cgttatcgct	acttacactg	acaagaccat	tggtgacaac	600
caagtctacc	cagaacaggg	taccgtcgct	ttcgggttc	gtctgcacgg	atggcttcc	660
accgttagac	agttcgccac	tagatactcc	aagaagttcg	gtgttgcacag	aatcaagatg	720
atggagcgtc	tgtggggaga	ctcttacttc	aacccaaaga	ccaagaaatg	gaccaacaag	780
gacaaggacg	ccgctggaaa	gcctttggag	cgtccctca	acatgttctg	tttgacccct	840
atctccgtc	tgtttgtc	catcatgaac	ttcaagaagg	atgaaattcc	agttctgttg	900
gagaaattgg	agatcaacct	gaagcgtgag	gagaaggagt	tggagggtaa	ggctttttg	960
aaggttgtca	tgagaaagtt	cttgccagct	gccgacgctt	tgtggagat	gattttctt	1020
cacccat	ctccagtcac	cgctcaagct	tacagagccg	agactttgt	cgaaggcca	1080
tctgtatgacc	aattctgcat	tggtatcaga	gagtgtgacc	ctaaggctga	gctgtatgg	1140
tacatttcca	agatgggtcc	aacctccgac	aaaggtagat	tctacgcctt	cggtcggtt	1200
ttctccgt	ctgttaagtc	cggtcaaaag	gtcagaatcc	aaaggctctaa	ctacgttcca	1260
ggtaagaagg	aggacttgtt	catcaaggct	gttcaaagaa	ctgttttgc	gatggaaaga	1320
accgtcgagc	ctattgtacga	tgtcccagct	ggtaacattc	tgggtattgt	gggtatcgac	1380
cagttctgc	tgaagtctgg	tacttact	accaacgaag	ccgctcacaa	catgaagggt	1440
atgaaattct	ctgtctctcc	agttgtgca	gttgcgttg	aggtcaagaa	cgctaatgt	1500
ctgcccagt	tggttgaggg	tctgaagcgt	ttgtccaagt	ctgacccatg	tgttttaacc	1560
tacatctccg	agtctggtga	gcacattgtt	gctggactg	gtgagctgca	cttgaaatc	1620
tgtttgcag	atctgcaaga	cgaccacgct	ggtgtccctc	tgaagattc	tcctccagtt	1680
gttacctacc	gtgagactgt	cactaacgaa	tcttccatga	ctgcccgtc	caagtctcag	1740
aacaagcata	acagaattta	cctgaaggct	caaccaattg	acgaggaatt	gtcttggct	1800
atcgaagaag	gtaagggtca	cccaagagac	gactttaaag	ccagagccag	aatcatggct	1860
gatgaatacg	gttgggacgt	cactgatgcc	agaaagatct	ggtgtttcgg	tccagacgg	1920

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actggtgcca	acttagttgt	tgaccagtct	aaggctgtcc	aataacttgca	cgagatcaag	1980
gactctgttg	ttgccggttt	ccaattggct	accaaggaag	gtccaaatttt	gggagaaaaac	2040
atgagatccg	tcagagtcaa	catcttggat	gttaccctgc	acgcccgtgc	tatccacaga	2100
ggtggaggac	aagtcatcattcc	aaccatgaag	agagttacct	acgcccgcctt	cctgttggct	2160
gagccagcta	tccaggagcc	tatcttcttg	gtggagatcc	aatgtccaga	aatgtccatt	2220
ggtggtatct	actctgtttt	gaacaagaag	agaggtcaag	ttatctctga	ggaacaaaga	2280
ccaggtaccc	cattgttcac	tgtcaaagct	tacttgcag	ttaacgagtc	attcggtttc	2340
accggtaac	tgagacaaggc	taccgctggt	caagcttcc	cacagatggt	gttcgaccac	2400
tgggccaaca	tgaatggtaa	cccattggac	ccagcctcca	aggtcggtga	gattgttctt	2460
gctgccagaa	agagacaggg	tatgaaggag	aacgtccctg	gttatgaaga	gtactacgac	2520
aagttgtaag	cttaatgttt	cattaactta	tttgtgtcgt	tcgtatgtct	atttacgtac	2580
ttaattcagt	gtattgtgt	t				2601

<210> 14

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence; note =
synthetic construct

<400> 14

Ala His Val Asp His Gly Lys Ser Thr
1 5

<210> 15

<211> 13

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence; note =
synthetic construct

<400> 15

Asp Glu Gln Glu Arg Gly Ile Thr Ile Lys Ser Thr Ala
1 5 10

<210> 16

<211> 896

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence; note =
synthetic construct

<400> 16

Ala Gly Ala Asp Asp Val Val Asp Ser Ser Lys Ser Phe Val Met Glu
1 5 10 15
Asn Phe Ala Ser Tyr His Gly Thr Lys Pro Gly Tyr Val Asp Ser Ile
20 25 30

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Gln Lys Gly Ile Gln Lys Pro Lys Ser Gly Thr Gln Gly Asn Tyr Asp
 35 40 45
 Asp Asp Trp Lys Gly Phe Tyr Ser Thr Asp Asn Lys Tyr Asp Ala Ala
 50 55 60
 Gly Tyr Ser Val Asp Asn Glu Asn Pro Leu Ser Gly Lys Ala Gly Gly
 65 70 75 80
 Val Val Lys Val Thr Tyr Pro Gly Leu Thr Lys Val Leu Ala Leu Lys
 85 90 95
 Val Asp Asn Ala Glu Thr Ile Lys Lys Glu Leu Gly Leu Ser Leu Thr
 100 105 110
 Glu Pro Leu Met Glu Gln Val Gly Thr Glu Glu Phe Ile Lys Arg Phe
 115 120 125
 Gly Asp Gly Ala Ser Arg Val Val Leu Ser Leu Pro Phe Ala Glu Gly
 130 135 140
 Ser Ser Ser Val Glu Tyr Ile Asn Asn Trp Glu Gln Ala Lys Ala Leu
 145 150 155 160
 Ser Val Glu Leu Glu Ile Asn Phe Glu Thr Arg Gly Lys Arg Gly Gln
 165 170 175
 Asp Ala Met Tyr Glu Tyr Met Ala Gln Ala Cys Ala Gly Asn Arg Val
 180 185 190
 Arg Arg Ser Val Gly Ser Ser Leu Ser Cys Ile Asn Leu Asp Trp Asp
 195 200 205
 Val Ile Arg Asp Lys Thr Lys Thr Lys Ile Glu Ser Leu Lys Glu His
 210 215 220
 Gly Pro Ile Lys Asn Lys Met Ser Glu Ser Pro Ala Lys Thr Val Ser
 225 230 235 240
 Glu Glu Lys Ala Lys Gln Tyr Leu Glu Glu Phe His Gln Thr Ala Leu
 245 250 255
 Glu His Pro Glu Leu Ser Glu Leu Lys Thr Val Thr Gly Thr Asn Pro
 260 265 270
 Val Phe Ala Gly Ala Asn Tyr Ala Ala Trp Ala Val Asn Val Ala Gln
 275 280 285
 Val Ile Asp Ser Glu Thr Ala Asp Asn Leu Glu Lys Thr Thr Ala Ala
 290 295 300
 Leu Ser Ile Leu Pro Gly Ile Gly Ser Val Met Gly Ile Ala Asp Gly
 305 310 315 320
 Ala Val His His Asn Thr Glu Glu Ile Val Ala Gln Ser Ile Ala Leu
 325 330 335
 Ser Ser Leu Met Val Ala Gln Ala Ile Pro Leu Val Gly Glu Leu Val
 340 345 350
 Asp Ile Gly Phe Ala Ala Tyr Asn Phe Val Glu Ser Ile Ile Asn Leu
 355 360 365
 Phe Gln Val Val His Asn Ser Tyr Asn Arg Pro Ala Tyr Ser Pro Gly
 370 375 380
 His Lys Thr Gln Pro Phe Leu Pro Trp Asp Ile Gln Met Thr Gln Thr
 385 390 395 400
 Thr Ser Ser Leu Ser Ala Ser Leu Gly Asp Arg Val Thr Ile Ser Cys
 405 410 415
 Arg Ala Ser Gln Asp Ile Arg Asn Tyr Leu Asn Trp Tyr Gln Gln Lys
 420 425 430
 Pro Asp Gly Thr Val Lys Leu Leu Ile Tyr Tyr Thr Ser Arg Leu His
 435 440 445
 Ser Gly Val Pro Ser Lys Phe Ser Gly Ser Gly Ser Gly Thr Asp Tyr
 450 455 460

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Ser Leu Thr Ile Ser Asn Leu Glu Gln Glu Asp Ile Ala Thr Tyr Phe
 465 470 475 480
 Cys Gln Gln Gly Asn Thr Leu Pro Trp Thr Phe Ala Gly Gly Thr Lys
 485 490 495
 Leu Glu Ile Lys Gly Gly Ser Gly Gly Gly Ser Gly Gly
 500 505 510
 Gly Gly Ser Glu Val Gln Leu Gln Gln Ser Gly Pro Glu Leu Val Lys
 515 520 525
 Pro Gly Ala Ser Met Lys Ile Ser Cys Lys Ala Ser Gly Tyr Ser Phe
 530 535 540
 Thr Gly Tyr Thr Met Asn Trp Val Lys Gln Ser His Gly Lys Asn Leu
 545 550 555 560
 Glu Trp Met Gly Leu Ile Asn Pro Tyr Lys Gly Val Ser Thr Tyr Asn
 565 570 575
 Gln Lys Phe Lys Asp Lys Ala Thr Leu Thr Val Asp Lys Ser Ser Ser
 580 585 590
 Thr Ala Tyr Met Glu Leu Leu Ser Leu Thr Ser Glu Asp Ser Ala Val
 595 600 605
 Tyr Tyr Cys Ala Arg Ser Gly Tyr Tyr Gly Asp Ser Asp Trp Tyr Phe
 610 615 620
 Asp Val Trp Gly Ala Gly Thr Thr Val Thr Val Ser Ser Gly Gly
 625 630 635 640
 Gly Ser Gly Gly Ser Gly Gly Ser Asp Ile Gln Met
 645 650 655
 Thr Gln Thr Thr Ser Ser Leu Ser Ala Ser Leu Gly Asp Arg Val Thr
 660 665 670
 Ile Ser Cys Arg Ala Ser Gln Asp Ile Arg Asn Tyr Leu Asn Trp Tyr
 675 680 685
 Gln Gln Lys Pro Asp Gly Thr Val Lys Leu Leu Ile Tyr Tyr Thr Ser
 690 695 700
 Arg Leu His Ser Gly Val Pro Ser Lys Phe Ser Gly Ser Gly Ser Gly
 705 710 715 720
 Thr Asp Tyr Ser Leu Thr Ile Ser Asn Leu Glu Gln Glu Asp Ile Ala
 725 730 735
 Thr Tyr Phe Cys Gln Gln Gly Asn Thr Leu Pro Trp Thr Phe Ala Gly
 740 745 750
 Gly Thr Lys Leu Glu Ile Lys Gly Gly Ser Gly Gly Gly Gly
 755 760 765
 Ser Gly Gly Gly Ser Glu Val Gln Leu Gln Gln Ser Gly Pro Glu
 770 775 780
 Leu Val Lys Pro Gly Ala Ser Met Lys Ile Ser Cys Lys Ala Ser Gly
 785 790 795 800
 Tyr Ser Phe Thr Gly Tyr Thr Met Asn Trp Val Lys Gln Ser His Gly
 805 810 815
 Lys Asn Leu Glu Trp Met Gly Leu Ile Asn Pro Tyr Lys Gly Val Ser
 820 825 830
 Thr Tyr Asn Gln Lys Phe Lys Asp Lys Ala Thr Leu Thr Val Asp Lys
 835 840 845
 Ser Ser Ser Thr Ala Tyr Met Glu Leu Leu Ser Leu Thr Ser Glu Asp
 850 855 860
 Ser Ala Val Tyr Tyr Cys Ala Arg Ser Gly Tyr Gly Asp Ser Asp
 865 870 875 880
 Trp Tyr Phe Asp Val Trp Gly Gln Gly Thr Thr Leu Thr Val Phe Ser
 885 890 895

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<210> 17
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence; note =
synthetic construct

<221> misc_feature
<222> 15
<223> S = G or C

<400> 17
ggggsggggs ggggs 15

<210> 18
<211> 16
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence; note =
synthetic construct

<221> misc_feature
<222> 4,8,12,16
<223> s = g or c

<400> 18
gggsgggsggg gsggggs 16

<210> 19
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence; note =
synthetic construct

<221> VARIANT
<222> 2
<223> Xaa= any amino acid

<221> VARIANT
<222> 3
<223> Xaa = s or t

<400> 19
Asn Xaa Xaa
1

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<210> 20
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence; note =
synthetic construct

<400> 20
ttggttattg accaaactaa ggctgtccaa 30

<210> 21
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence; note =
synthetic construct

<400> 21
acctcttttc ttgtttaaga cggagtagat 30

<210> 22
<211> 39
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence; note =
synthetic construct

<400> 22
cttgcttttg cggccgcctt tttttttttt tttttttt 39

<210> 23
<211> 41
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence; note =
synthetic construct

<400> 23
gataagaatg cggccgcctt ttcttggctt ttgggttgaa g 41

<210> 24
<211> 42
<212> DNA
<213> Artificial Sequence

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<220>
<223> Description of Artificial Sequence; note =
synthetic construct

<400> 24
gataagaatg cggccgccaa cttagttgtt gaccagtcta ag 42

<210> 25
<211> 36
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence; note =
synthetic construct

<400> 25
atagctagca ctttgaagtt cttaattttg ttcctc 36

<210> 26
<211> 43
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence; note =
synthetic construct

<400> 26
ataagaatgc ggccgcaagt taatgaaaca ttaagcttac aac 43

<210> 27
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence; note =
synthetic construct

<400> 27
gaatgacttg tcctccacc 19

<210> 28
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence; note =
synthetic construct

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<400> 28
gaatgacttg tcctccgcgg 20

<210> 29
<211> 39
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence; note =
synthetic construct

<400> 29
caactagcta gcgctcacaa catgaaggtc atgaaattc 39

<210> 30
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence; note =
synthetic construct

<400> 30
agaaccgtcg agcctattga cgat 24

<210> 31
<211> 56
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence; note =
synthetic construct

<400> 31
ccctgcacgc cgatgctatc cacagaagag gaggacaagt cattccaacc atgaag 56

<210> 32
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence; note =
synthetic construct

<400> 32
gccgatgcta tccacagaag a 21

<210> 33
<211> 21

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<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence; note =
synthetic construct

<400> 33

gccgatgcta tccaccggcg c

21

<210> 34

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence; note =
synthetic construct

<400> 34

tctcttcttg ttcaaaacag agtagatacc

30

<210> 35

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence; note =
synthetic construct

<221> misc_feature

<222> 7,15

<223> n = g,a, c or t(u)

<400> 35

gtatgtncac taacntag

18